

## LISTING OF THE CLAIMS

What is claimed is:

1. (previously presented) An apparatus for separating and purifying nucleic acids comprising an integral monolith structure, wherein through-pores (macro-pores) continuously extending from one end of the monolith structure to the other end and corresponding to the sizes of nucleic acids are provided and configured so that nucleic acids corresponding to the through-pores (macro-pores) can be retained respectively by allowing a solution containing nucleic acids to be separated to pass therethrough.
2. (currently amended) The apparatus for separating and purifying nucleic acids according to claim 1, ~~characterized in that~~ wherein the monolith structure employs an inorganic material or a hybrid material containing an organic material and an inorganic material, which is a porous body having macro-pores (through-pores) penetrating from an upper surface to a lower surface.
3. (currently amended) The apparatus for separating and purifying nucleic acids according to claim 2, ~~characterized in that~~ wherein the porous body of the monolith structure has micro-pores in the macro-pores.
4. (previously presented) The apparatus for separating and purifying nucleic acids according to claim 3, wherein the porous body of the monolith structure has a macro-pore size of 1 to 100  $\mu\text{m}$  and a micro-pore size of 0 to 100 nm.
5. (previously presented) The apparatus for separating and purifying nucleic acids according to claim 1, wherein a disc formed with the monolith structure is placed in a column tube to form a monolith solid phase column.

6. (currently amended) The apparatus for separating and purifying nucleic acids according to claim 1, wherein the ~~mechanism~~ apparatus employs a monolith solid phase column formed by detachably attaching a base formed with the monolith structure to a cylindrical body having the top and the bottom opened.

7. (previously presented) The apparatus for separating and purifying nucleic acids according to claim 1, characterized in that the porous body of the monolith structure has micro-pores in the macro-pores.

8. (previously presented) The apparatus for separating and purifying nucleic acids according to claim 1, wherein the porous body of the monolith structure has a macro-pore size of 1 to 100  $\mu\text{m}$  and a micro-pore size of 0 to 100 nm.

9. (previously presented) The apparatus for separating and purifying nucleic acids according to claim 2, wherein the porous body of the monolith structure has a macro-pore size of 1 to 100  $\mu\text{m}$  and a micro-pore size of 0 to 100 nm.

10. (previously presented) The apparatus for separating and purifying nucleic acids according to claim 2, wherein a disc formed with the monolith structure is placed in a column tube to form a monolith solid phase column.

11. (previously presented) The apparatus for separating and purifying nucleic acids according to claim 3, wherein a disc formed with the monolith structure is placed in a column tube to form a monolith solid phase column.

12. (previously presented) The apparatus for separating and purifying nucleic acids according to claim 4, wherein a disc formed with the monolith structure is placed in a column tube to form a monolith solid phase column.

13. (currently amended) The apparatus for separating and purifying nucleic acids according to claim 2, wherein the ~~mechanism-apparatus~~ employs a monolith solid phase column formed by detachably attaching a base formed with the monolith structure to a cylindrical body having the top and the bottom opened.

14. (currently amended) The apparatus for separating and purifying nucleic acids according to claim 3, wherein the ~~mechanism-apparatus~~ employs a monolith solid phase column formed by detachably attaching a base formed with the monolith structure to a cylindrical body having the top and the bottom opened.

15. (currently amended) The apparatus for separating and purifying nucleic acids according to claim 4, wherein the ~~mechanism-apparatus~~ employs a monolith solid phase column formed by detachably attaching a base formed with the monolith structure to a cylindrical body having the top and the bottom opened.

16. (currently amended) The apparatus for separating and purifying nucleic acids according to claim 5, wherein the ~~mechanism-apparatus~~ employs a monolith solid phase column formed by detachably attaching a base formed with the monolith structure to a cylindrical body having the top and the bottom opened.

17. (new) A method for separating and purifying nucleic acids comprising a step of using an integral monolith structure, wherein through-pores (macro-pores) continuously extending from one end of the monolith structure to the other end and corresponding to the sizes of nucleic acids are provided and configured so that nucleic acids corresponding to the through-pores (macro-pores) can be retained respectively by allowing a solution containing nucleic acids to be separated to pass therethrough.

18. (new) The method for separating and purifying nucleic acids according to claim 17, wherein the monolith structure employs an inorganic material or a hybrid material containing

an organic material and an inorganic material, which is a porous body having macro-pores (through-pores) penetrating from an upper surface to a lower surface.

19. (new) The method for separating and purifying nucleic acids according to claim 17, wherein the porous body of the monolith structure has micro-pores in the macro-pores.

20. (new) The method for separating and purifying nucleic acids according to claim 18, wherein the porous body of the monolith structure has micro-pores in the macro-pores.